CHAPTER 1. INTRODUCTION

The goal of the Sacramento River Water Reliability Study (SRWRS) is to develop a water supply plan that is consistent with the Water Forum Agreement[1] (WFA) objectives of pursuing a Sacramento River diversion to meet water supply needs of the Placer-Sacramento region and promoting ecosystem preservation along the lower American River. The results from the SRWRS will be used as the basis for seeking necessary approvals and permits from the responsible resource agencies to allow execution of necessary agreements and construction of the recommended water supply infrastructure. This **Interim Report** documents the preliminary findings of the study to date and identifies future steps of the SRWRS.

*This **Interim Report** provides updates on development of the Sacramento River Water Reliability Study.*

The SRWRS study area includes the Sacramento area north of the American River and east of the Sacramento River (see **Figure 1-1**). The American River watershed (or drainage basin) covers about 2,100 square miles northeast of the City of Sacramento and includes portions of Placer, El Dorado, and Sacramento counties. The American River is a tributary of Sacramento River. The Sacramento River watershed covers most northern California counties. Folsom Dam and Reservoir on the American River and Shasta Dam and Reservoir on the Sacramento River are Central Valley Project (CVP) storage facilities, owned and operated by the United States Department of Interior, Bureau of Reclamation (Reclamation).

STUDY AUTHORIZATION

The SRWRS is authorized under Public Law (PL) 106-554, Appendix D, Division B, Section 103, which directs the Secretary of the Interior to conduct a feasibility study for a Sacramento River diversion project, consistent with the WFA, dated April 24, 2000.

As directed in PL 106-554 (see page 1-3 of this Interim Report), the SRWRS is to consider a Sacramento River diversion to accommodate the following water supply requests.

- **Placer County Water Agency (PCWA)** – 35,000 acre-feet (AF) per year of CVP contract water (under an existing CVP contract) for municipal and industrial (M&I) uses
- **Sacramento Suburban Water District or SSWD**– 29,000 AF per year from its PCWA water sale agreement[2] for use in a groundwater stabilization project
- Other diversions agreed upon by the WFA signatories and potentially affected parties upstream on the Sacramento River. The SRWRS has identified two additional potential diversion benefactors and project partners:
    - **City of Roseville (Roseville)** – 7,100 AF per year from its PCWA water sale agreement for use in groundwater recharge and system reliability.
    - **City of Sacramento (Sacramento)** – An additional diversion point for its water rights to improve system reliability.

[1] The Sacramento Area Water Forum and the WFA are described in Chapter 2.

[2] This water sale agreement was originally signed by the former Northridge Water District. (In 2002, Northridge Water District and Arcade Water District consolidated to form SSWD.)

COST-SHARING PARTNERS

The Reclamation Manual, Directives and Standards CMP 05-02, requires non-federal cost-sharing for the SRWRS. On June 26, 2002, PCWA signed a Memorandum of Agreement with Reclamation to share a minimum of 50 percent of the study cost. PCWA then entered into separate cost-sharing agreements with its third party cost-sharing partners: SSWD, Roseville, and Sacramento.

Placer County Water Agency, Sacramento Suburban Water District, the City of Roseville, and the City of Sacramento are cost-sharing partners of the SRWRS.

As directed by PL 106-554, Reclamation also entered into a Financial Assistance Grant Agreement with Placer County on September 19, 2002, supporting development of a countywide habitat conservation plan known as Placer Legacy. The grant and the development of Placer Legacy are outside of the scope of the SRWRS; however, the first stage of plan development will address western Placer County, a focus area of the SRWRS.

Study Authorization, Public Law 106-554 Appendix D Division B

SEC. 103. (a) IN GENERAL.—The Secretary of the Interior shall conduct a feasibility study for a Sacramento River, California, diversion project that is consistent with the Water Forum Agreement among the members of the Sacramento, California, Water Forum dated April 24, 2000, and that considers—

(1) consolidation of several of the Natomas Central Mutual Water Company's diversions;
(2) upgrading fish screens at the consolidated diversion;
(3) the diversion of 35,000 acre feet of water by the Placer County Water Agency;
(4) the diversion of 29,000 acre feet of water for delivery to the Northridge Water District;
(5) the potential to accommodate other diversions of water from the Sacramento River, subject to additional negotiations and agreement among Water Forum signatories and potentially affected parties upstream on the Sacramento River; and
(6) an inter-tie between the diversions referred to in paragraphs (3), (4), and (5) with the Northridge Water District's pipeline that delivers water from the American River.

(b) REQUIRED COMPONENTS.—The feasibility study shall include—

(1) the development of a range of reasonable options;
(2) an environmental evaluation; and
(3) consultation with Federal and State resource management agencies regarding potential impacts and mitigation measures.

(c) WATER SUPPLY IMPACT ALTERNATIVES.—The study authorized by this section shall include a range of alternatives, all of which would investigate options that could reduce to insignificance any water supply impact on water users in the Sacramento River watershed, including Central Valley Project contractors, from any delivery of water out of the Sacramento River as referenced in subsection (a). In evaluating the alternatives, the study shall consider water supply alternatives that would increase water supply for, or in, the Sacramento River watershed. The study should be coordinated with the CALFED program and take advantage of information already developed within that program to investigate water supply increase alternatives. Where the alternatives evaluated are in addition to or different from the existing CALFED alternatives, such information should be clearly identified.

(d) HABITAT MANAGEMENT PLANNING GRANTS.—The Secretary of the Interior, subject to the availability of appropriations, is authorized and directed to provide grants to support local habitat management planning efforts undertaken as part of the consultation described in subsection (b)(3) in the form of matching funds up to $5,000,000.

(e) REPORT.—The Secretary of the Interior shall provide a report to the Committee on Resources of the United States House of Representatives and to the Committee on Energy and Natural Resources of the United States Senate within 24 months from the date of enactment of this Act on the results of the study identified in subsection (a).

(f) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the Secretary of the Interior to carry out this section $10,000,000, which may remain available until expended, of which—

(1) $5,000,000 shall be for the feasibility study under subsection (a); and
(2) $5,000,000 shall be for the habitat management planning grants under subsection (d).

(g) LIMITATION ON CONSTRUCTION.—This section does not and shall not be interpreted to authorize construction of any facilities.

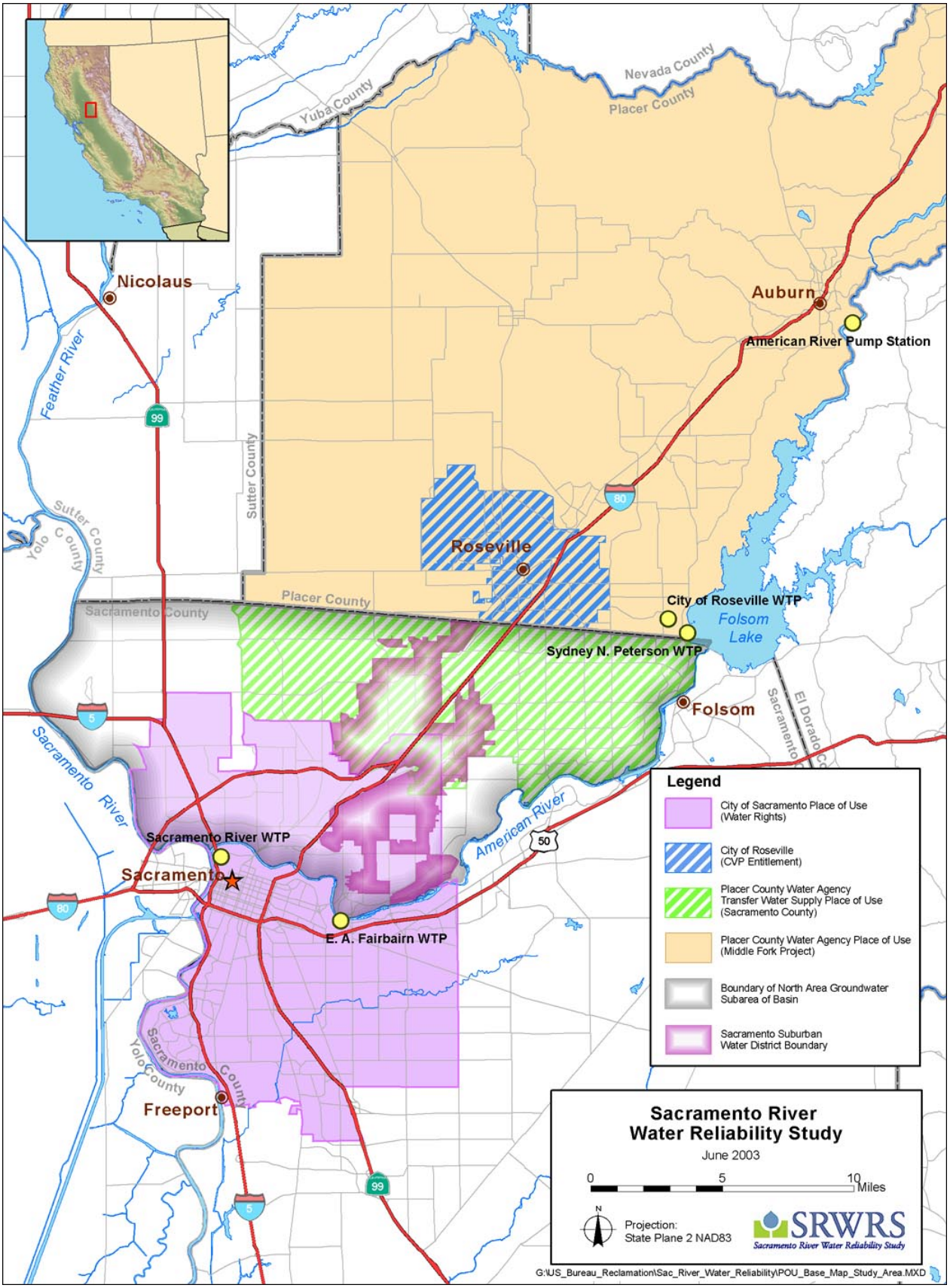

Figure 1-1. SRWRS Study Area Map

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CHAPTER 2. RELATED STUDIES, PROJECTS, AND PROGRAMS

The concept of a Sacramento River diversion for water supply in the Placer-Sacramento region has been included in or related to many previous and ongoing local, regional, and statewide studies, projects, and programs. These related efforts form the basis for many elements of the SRWRS, as depicted in **Figure 2-1**, and they are described below.

PREVIOUS PROGRAM-LEVEL STUDIES

Two program-level analyses that relate directly to the SRWRS are the American River Water Resources Investigation (ARWRI) and the Sacramento Area Water Forum (Water Forum). Both of these program-level studies were conducted to develop a comprehensive plan to address a complex suite of problems that could not be resolved by an individual project. Both studies concluded that conjunctive use and groundwater management are supportable alternatives and offer local assistance for sustainable local programs.

The SRWRS will tier from the programmatic ARWRI (including its Environmental Impact Statement [EIS]) and the Water Forum Agreement (including its Environmental Impact Report [EIR]). **Table 2-1** below compares major study elements addressed in these two programmatic documents and the SRWRS. Subjects/components not overlapping with the Study are assumed sufficiently addressed in the programmatic documents or covered through other ongoing efforts. Overlapping subjects/components will be the subject of project-specific analyses in the SRWRS.

Table 2-1. Comparison of Major Study Elements

Major Study Elements	ARWRI and EIS	Water Forum Agreement and EIR	SRWRS
Reservoirs and Conveyance	●		
Land Retirement	●		
Stanislaus River Transfer	●		
Reclamation	●	●	
Increased/New Diversions and Conveyance	●	●	●
Conservation Program	●	●	
Groundwater Management and Conjunctive Management	●	●	●
Re-operation of Upper American River Reservoirs		●	
Improved Flow Pattern for Fish		●	
Lower American River Habitat Management		●	
Lower American River Recreation Program		●	

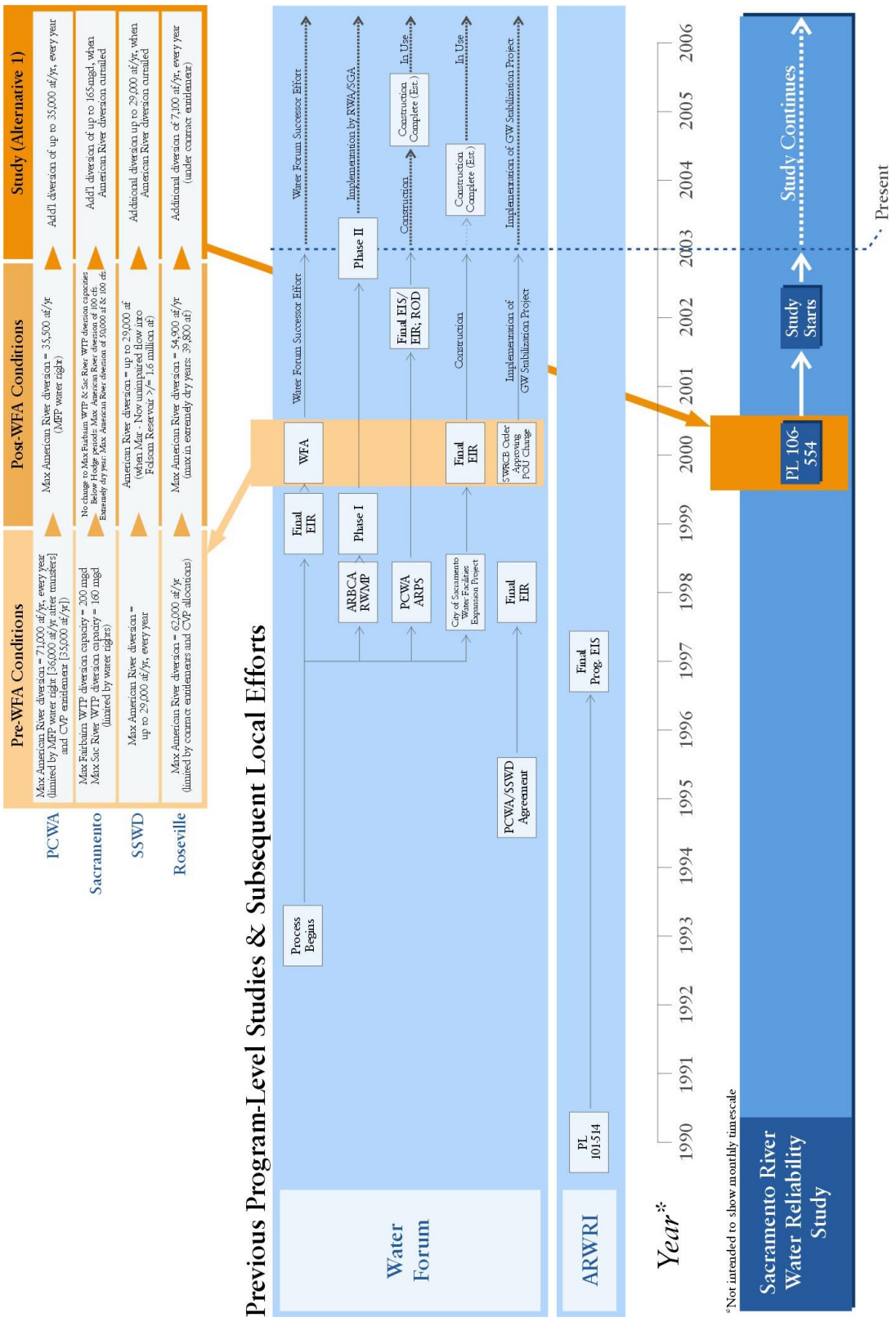

Figure 2-1. Relationship of the SRWRS and Previous/Ongoing Local, Regional, and Statewide Efforts

(a) Previous Program-Level Studies and Subsequent Local Efforts

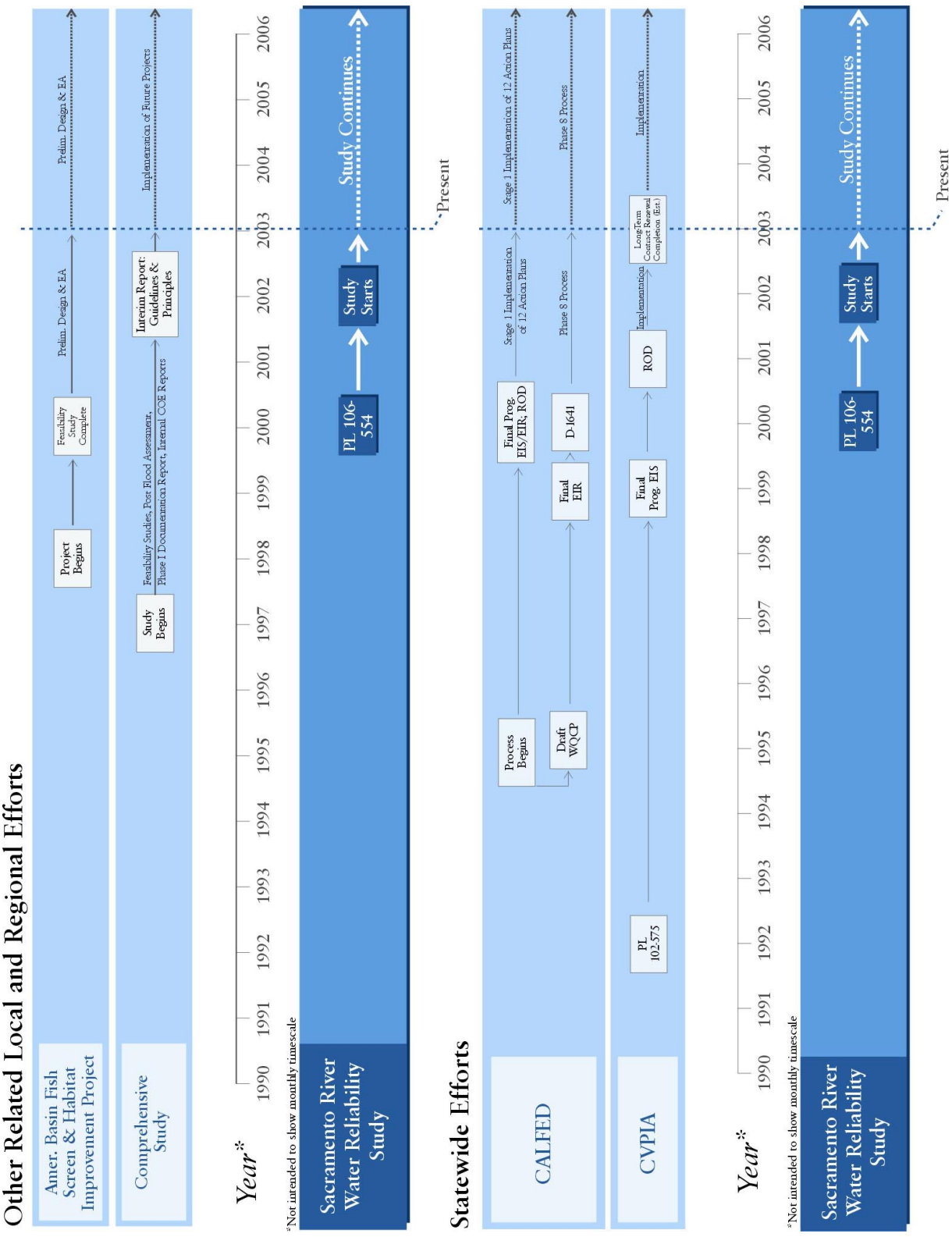

Figure 2-1. Relationship of the SRWRS and Previous/Ongoing Local, Regional, and Statewide Efforts

(b) Other Related Local, Regional, and Statewide Efforts

American River Water Resources Investigation

Before the Water Forum effort, Reclamation and local agencies completed the ARWRI, which has been documented in a Planning Report and the Final EIS in 1997. The five ARWRI objectives included the following:

1. Manage groundwater basins and surface water supplies to maintain beneficial uses and protect water quality

2. Provide water to meet projected water demands in 2030, including M&I and agricultural demands in five counties (El Dorado, Placer, Sacramento, San Joaquin, and Sutter)

3. Provide flows sufficient for water-oriented recreation

4. Sustain the riverine and associated biological environment

5. Be consistent with ongoing activities addressing flood protection needs

Three alternatives were developed and analyzed for the identified water supply and environmental needs in the ARWRI EIS: No-Action Alternative, Auburn Dam Alternative, and Conjunctive Use Alternative. The principal difference between the two action alternatives was the source of new yield. As the names imply, the Auburn Dam Alternative utilized the Auburn Dam as the main source of additional water supply, while the Conjunctive Use Alternative had a large conjunctive management component. The "Common Elements," as referred to in the document, in both alternatives include a Feather River Diversion of up to 74,000 AF per year to serve M&I demands in western Placer County (including 20,000 AF per year for Roseville, 29,000 AF per year for SSWD, and 25,000 AF per year for PCWA), and other components that could be implemented by local water purveyors such as wastewater reclamation, conservation, new and/or expanded surface water diversions, and new surface water storage.

The ARWRI concluded that the Conjunctive Use Alternative is the environmentally superior alternative, without identifying a federal role for meeting the future water demands within the ARWRI study area. However, Reclamation would assist local agencies with further study and/or implementation of the Common Elements, if provided with proper congressional authorization and appropriation.

Sacramento Area Water Forum and the Water Forum Agreement

Created in 1993 and building on the accomplishments of the ARWRI, the Sacramento Area Water Forum (Water Forum) is a group comprised of business and agricultural leaders, citizens groups, environmentalists, water managers, and local governments in the Sacramento region that joined together to fulfill two co-equal objectives:

1. Provide a reliable and safe water supply for the region's economic health and planned development to the year 2030; and

2. Preserve the fishery, wildlife, recreational, and aesthetic values of the lower American River.

In 2000, Water Forum members approved the WFA, which consists of seven integrated elements necessary to provide a regional solution to water shortages, environmental damage, groundwater contamination, and limited economic prosperity.[3] These seven elements include:

1. Increased surface water diversions
2. Actions to meet customers' needs while reducing diversion impacts in drier years
3. An improved pattern of fishery flow releases from Folsom Lake
4. Lower American River habitat management element
5. Water conservation element
6. Groundwater management element
7. Water Forum Successor Effort

The WFA also included provisions to assure that as each signatory fulfills its responsibilities, other signatories also honor their commitments. As part of these provisions, all signatories agreed to endorse, and where appropriate, participate in a Sacramento River supply for north Sacramento County and Placer County. It was recognized that this supply could be an additional source of water for conjunctive use in the North Area of the groundwater basin (see **Figure 1-1**). This supply could also provide a surface water supply to help meet a portion of some purveyors' needs in all years, which would contribute to a reliable supply for the area and reduce the need for some purveyors to divert from the American River in drier years.

The groundwater management element prescribed in the WFA is a major step toward meeting "actions to meet customers' needs while reducing diversion impacts in drier years" because it reinforces the regional groundwater resources for dry-year supply. Signatories of WFA will voluntarily leave surface water in the American River during "dry" years (i.e., forbear surface water diversions to which they are entitled), and use other water supply sources to meet water demands (e.g., groundwater, surface water diversions below the confluence of the American and Sacramento rivers, additional conservation, etc). Conversely, the signatories will maximize surface water diversions in "wet" years, allowing the groundwater basin to recover for use during the next dry cycle. Such a program requires modifications to current operations and construction of additional facilities for surface water diversions, groundwater recharge and extraction, and associated conveyance systems to maximize the flexibility of the regional water supply envisioned by the WFA.

LOCAL AND REGIONAL STUDIES, PROJECTS, AND PROGRAMS

The most relevant local and regional studies, projects, and programs are ongoing WFA implementation efforts.

Water Forum Agreement Implementation Efforts

Implementation of the elements prescribed in the WFA continues to be pursued through local and regional studies, projects, and programs. Each ongoing effort described below is directly related to a Sacramento

[3] In October 1999, a programmatic EIR for the Water Forum Proposal (WFP) was completed. The WFP included the seven elements subsequently approved within the WFA. The EIR states that the WFP was the environmentally preferred alternative with significant and potentially significant impacts to the lower American River and Folsom Reservoir, including effects on certain fisheries, recreational opportunities, and cultural resources. Potential mitigation measures were identified as a part of the lower American River habitat management element of the WFA.

River diversion in one of two ways: (1) such a diversion (or its variation) could be an integrated component of the effort, or (2) the eventual outcome of the effort could provide a backup solution if a diversion cannot be implemented.

Regional Water Master Plan (American River Basin Cooperative Agencies)

In 1998, water purveyors in southern Placer County and northern Sacramento County formed the American River Basin Cooperating Agencies (Cooperating Agencies) and began to implement regional conjunctive management program envisioned by the Water Forum. The objective of this effort, referred to as the Regional Water Master Plan (RWMP), is to develop equitable, cost-effective water resource management strategies for enhancing water supply reliability and operational flexibility for water users of Folsom Reservoir, the lower American River, and the connected groundwater basin. The subsequent implementation of the RWMP is being carried out by local water purveyors, the Sacramento Groundwater Authority (SGA),[4] and the Regional Water Authority (RWA).[5]

A Sacramento River diversion for PCWA, SSWD, Roseville, and Sacramento was identified in the RWMP as a major component of the region's future water supply and opportunities for conjunctive management.

Groundwater Stabilization Project (PCWA, SSWD)

This project would stabilize the overdrafted groundwater basin beneath the Sacramento-Placer region by providing up to 29,000 AF of surface water per year to an area that has historically relied on groundwater. PCWA and SSWD finalized an EIR in 1998 and have implemented in-lieu recharge since 2000. PCWA provides surface water to SSWD through a water sale agreement. This project is an integral part of the conjunctive management program envisioned in WFA.

However, the WFA placed restrictions on SSWD's American River diversions of PCWA water.[6] A Sacramento River diversion could provide surface water to SSWD during years when American River diversions would not be possible, thereby providing additional conjunctive management opportunities and supporting the efforts of the SGA and RWA.

Water Facilities Expansion Project (Sacramento)

Sacramento currently has two water treatment plants (WTPs): (1) the E.A. Fairbairn WTP (Fairbairn WTP), which diverts water from the American River, and (2) the Sacramento River WTP, which diverts water from the Sacramento River below its confluence with the American River. Sacramento is currently expanding these two WTPs to meet increasing demands within its service area. After the expansion, the Fairbairn WTP would have a capacity of 200 million gallons per day (mgd), and the Sacramento River WTP would have a capacity of 160 mgd. In November 2000, Sacramento has completed an EIR for these expansions. The expected completion data for construction is in 2004.

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[4] The SGA is a joint-powers authority (JPA) formed pursuant to the recommendation of WFA, and charged with protecting and regulating of the groundwater basin underlying northern Sacramento County.

[5] The RWA is a JPA charged with serving and representing the regional water supply interests of its members by protecting the reliability, availability, and quality of resources.

[6] The PCWA-SSWD water sales agreement specifies a schedule of increasing diversion amounts (beginning at 7,000 AF in 2000, reaching 29,000 AF in 2014, and continuing at that amount during the remainder of the agreement period). Based on projected unimpaired inflow into Folsom Reservoir, the WFA restricts SSWD's American River diversions under several scenarios (e.g., with and without a Sacramento River diversion, during a specified time period, and following that period, etc.).

As stated in the WFA, Sacramento would reduce its American River diversion at the Fairbairn WTP by up to 100 mgd during low-flow conditions or critically dry years. Expanding tthe Sacramento River WTP would allow diversions to be shifted from the American River to the Sacramento River, alleviating environmental concerns over using the new treatment capacity on additional American River diversions during low-flow conditions. However, due to limitation of potential expansion, the new Sacramento River diversion would only recover part of the reduction in reliability due to the American River diversion reductions.

American River Pump Station Project (Reclamation, PCWA)

The American River Pump Station (ARPS) project would: (1) provide facilities that would allow PCWA to divert up to 35,500 AF per year of its Middle Fork Project (MFP) water rights, (2) eliminate a safety issue associated with the Auburn Dam bypass tunnel, and (3) allow for all preconstruction beneficial uses of water in what is now the dewatered river channel (e.g., recreation, navigation, and other instream beneficial uses). Reclamation and PCWA completed a final EIS/EIR in June 2002 for the project. PCWA approved the project in July 2002, and Reclamation issued a Record of Decision (ROD) for project implementation in September 2002. Construction is expected to start in 2003 and last about 2 years.

Other Related Local and Regional Studies, Projects, and Programs

Many local and regional studies, projects, and programs can be related to the SRWRS directly and indirectly because of the connection of California water supply system. The following studies, projects, and programs are among those could have close relationship.

American Basin Fish Screen and Habitat Improvement Project (Natomas Mutual Water Company)

When completed, the American Basin Fish Screen and Habitat Improvement Project (ABRSHIP) would consolidate five Sacramento River diversions of the Natomas Mutual Water Company (NMWC) and several local riparian water right holders into two diversions with positive barrier fish screens. The WFA recommends this consolidation.

The ABRSHIP also would eliminate a dam at the mouth of the Natomas Cross Canal, and would benefit the environment and the Sacramento River fishery. After consolidation, NMWC would divert from the Sacramento River at two diversions near where Sankey Road and Elkhorn Boulevard intersect the levee. NMWC completed a Negative Declaration and an Environmental Assessment in 2003 for the project. Currently, the project is undergoing final design of the facilities. The SRWRS would need to coordinate with the ABRSHIP to consider the possibility of developing diversion at these two future consolidated diversion locations.

Sacramento-San Joaquin River Basins Comprehensive Study (U.S. Army Corps of Engineers, The Reclamation Board of the State of California)

In response to extensive flooding and damages experienced in January 1997, the U.S. Congress authorized the U.S. Army Corps of Engineers (USACE) to provide a comprehensive analysis of the Sacramento and San Joaquin River basin flood management systems and to partner with the State of California to develop master plans for flood management. USACE and The Reclamation Board of the State of California are leading the Sacramento-San Joaquin River Basins Comprehensive Study (Comprehensive Study) to improve flood management and integrate ecosystem restoration in the Sacramento and San Joaquin River basins.

The objectives of the Comprehensive Study are to identify problems and opportunities, set planning objectives and priorities, and develop potential measures to address flood damage reduction and ecosystem restoration. The study would examine a full range of structural and nonstructural measures and strategies. The basin master plans would include implementation plans and supporting programmatic environmental documentation.

The Comprehensive Study has been coordinated and consistent with the CALFED Bay-Delta Program (CALFED). Many CALFED-proposed projects could be benefited from implementation of actions identified in the Comprehensive Study. The development of a Sacramento River diversion should be coordinated with implementation of actions stemming from the Comprehensive Study.

STATEWIDE STUDIES, PROJECTS, AND PROGRAMS

The SRWRS also may be affected by implementation of other previous or ongoing statewide efforts such as the Central Valley Project Improvement Act (CVPIA) and CALFED. These two programs largely govern the overall conditions of water supply planning and management in California.

Central Valley Project Improvement Act

On October 30, 1992, President Bush signed into law the Reclamation Projects Authorization and Adjustment Act of 1992 (PL 102-575), which included Title XXXIV, the CVPIA. The CVPIA amends previous authorizations of the CVP to provide fish and wildlife protection, restoration, and mitigation as project purposes equal priority with irrigation and domestic water supply uses, and fish and wildlife enhancement equal priority with power generation.

The Final Programmatic EIS for CVPIA implementation was completed in October 1999, and Reclamation subsequently issued a ROD in January 2001 on implementation of the recommended plan. Programs identified in the ROD for which Reclamation is responsible include CVP contract renewals, the Anadromous Fish Restoration Program (AFRP), CVP reoperation for the AFRP without affecting fulfillment of CVP contractual obligations, Habitat Restoration Program, and dedication of 800,000 AF of CVP water for fish and wildlife purposes, also known as "(b)(2) water."

The operation of a Sacramento River diversion should be consistent with CVPIA and its implementation. In particular, among the SRWRS cost-sharing partners, PCWA and Roseville have CVP water service contracts with Reclamation. In particular, the annual diversion of 35,000 AF for PCWA is included in the SRWRS. PCWA and Roseville have completed negotiations for contract renewals with Reclamation – these contracts would be effective following completion of the environmental review process.

CALFED Bay-Delta Program

CALFED was established to develop a long-term comprehensive plan for restoring ecological health and improving water management for the beneficial uses of the San Francisco Bay/Sacramento-San Joaquin Delta (Delta) system. The SRWRS is not part of the CALFED ROD implementation studies; however, coordination with CALFED efforts is required in identifying alternatives to reduce potential water supply impacts, as stated in the SRWRS authorization.

CALFED Programmatic Record of Decision

Following the issuance of a CALFED Programmatic EIS/EIR in July 2000, the CALFED Agencies issued a programmatic ROD in August 2000 that identified 12 action plans, including Governance, Ecosystem Restoration, Watersheds, Water Supply Reliability, Storage, Conveyance, Environmental Water Account (EWA), Water Use Efficiency, Water Quality, Water Transfer, Levees, and Science Programs. The CALFED Agencies then proceeded to Stage 1 implementation of the ROD including the first 7 years of a 30-year program for establishing foundation for long-term actions.

CALFED actions on the Sacramento River and within the Sacramento River Basin that could affect activities in the SRWRS study Area and statewide water management includes storage projects (e.g., Shasta Dam and Reservoir Enlargement, Sites Reservoir, and groundwater storage projects); EWA operations (e.g., complying with biological opinions (BOs), the 1995 Water Quality Control Plan [WQCP] for the San

Francisco Bay/Sacramento-San Joaquin Delta Estuary [see below], and dedication of (b)(2) water); and ecosystem restoration projects. CALFED actions on the American River that could affect the SRWRS may include EWA operations and ecosystem restoration projects. The implementation of these actions may affect the American River, the Sacramento River, and the SRWRS.

State Water Resources Control Board's Decision-1641

As part of the CALFED process, the State Water Resources Control Board (SWRCB) issued a draft WQCP for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary in 1995. The draft WQCP specified revised flow and water quality standards in the Delta and regulated CVP and State Water Project (SWP) operations potentially affecting the Delta. The EIR, which was completed in 1999 for the implementation of the WQCP, concluded that implementing the draft WQCP would have unavoidable impacts on water supply. The subsequent SRWCB Decision-1641 (D-1641) required that the CVP and SWP be responsible for meeting Delta water quality flow and salinity objectives, as specified in the WQCP, until a settlement is reached with other Sacramento Valley water right holders (this settlement process is also known as the "Phase 8 Proceedings"). For the CVP, operating Folsom Reservoir for meeting Delta water quality objectives is considered more efficient and effective because it is closer (i.e., shorter travel time) and water quality of the American River is often better than that of the Sacramento River.

The diversions currently considered in the SRWRS would be affected by the CVP/SWP operations for environmental water needs in the Delta required in the WQCP, especially the operations of Folsom Dam.

Ongoing Storage Investigations

The CALFED ROD describes additional water storage as an important activity to improve water quality and water supply reliability for California. Through the Storage Program, both surface water and groundwater storage projects in the Central Valley will be developed as part of an overall water management strategy. Groundwater and surface water storage may be used to improve water supply reliability, provide water for the environment at times when it is needed most, provide flows timed to maintain water quality, and protect levees through coordinated operation with existing flood control reservoirs. As part of Stage 1 implementation of the ROD, the following investigations are underway:

- **In-Delta Storage Program.** In-Delta storage would help meet the ecosystem needs of the Delta, EWA, and CVPIA; provide water for use within the Delta; and increase reliability, operational flexibility, and water availability south of the Delta water use by the SWP and the CVP contractors. The lease/purchase of the proposed Delta Wetlands Project and the potential for a new storage project are being explored.

- **Shasta Dam and Reservoir Enlargement.** This investigation explores an expansion to help increase the pool of cold water available to maintain water temperatures in the lower Sacramento River needed for certain fish and to provide other water management benefits, such as water supply reliability.

- **Los Vaqueros Reservoir Expansion Studies.** These studies examines expanding the existing Los Vaqueros Reservoir with local partners as part of an initiative to provide water quality and water supply reliability benefits to Bay Area water users.

- **Sites Reservoir.** The feasibility of a new off-stream storage facility is being evaluated. This new north-of-Delta reservoir would enhance water management flexibility in the Sacramento Valley, and providing fisheries, water quality, and EWA benefits.

- **Upper San Joaquin River Basin Storage Investigation.** This investigation evaluates a range of approaches to increase water supplies through enlargement of Millerton Lake at Friant Dam or a

functionally equivalent storage program. This storage would help restore and improve water quality of the San Joaquin River, and facilitate conjunctive water management and water exchange that would improve the quality of water deliveries to urban communities.

The CALFED ROD also requires development of locally managed and controlled conjunctive management projects such as the program implemented under the WFA for groundwater conjunctive management.